

09/955,517

G0228

REMARKS

Claims 1-20 and 25 are currently pending in the subject application and are presently under consideration. The herein amendments do not raise new issues requiring further search since the elements added to independent claim 1 for example were already present in other originally filed claims. Accordingly, entry and consideration of the amendments is respectfully requested. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1-8, 15-20, and 25 Under 35 U.S.C. §102(b)

Claims 1-8, 15-20, and 25 stand rejected under 35 U.S.C. §102(b) as being anticipated by Latos (US Patent No. 4,208,240). It is respectfully requested that this rejection be withdrawn for at least the following reason. Latos does not teach or suggest each and every element of the subject claims.

A single prior art reference anticipates a patent claim only if it expressly or inherently describes each and every limitation set forth in the patent claim. *Trintec Industries, Inc., v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 U.S.P.Q.2D 1597 (Fed. Cir. 2002); *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the ... claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Independent claim 1 (and similarly independent claims 15 and 25) has been amended herein to recite a system for *measuring* the etching of features (e.g. apertures) associated with alternating aperture phase shift mask (AAPSM) fabrication utilizing a light based measuring system. (See page 4, lines 29-31). In general, the *measuring* system emits light onto the mask surface, the light reflected from the one or more apertures is indicative of at least one parameter (e.g. dimension) of the mask fabrication process (e.g. depth of opening, width of opening, trench wall slope). (See page 5, lines 14-16). The depth, width and/or trench wall angles are important to the fidelity of the image transfer process due to the effects on phase shifting and diffraction of the light. (See page 5, lines

09/955,517

G0228

17-18). Thus, *measuring* the depth, width and/or trench wall angles of the apertures in the mask enables fabrication of higher quality complementary phase shift masks as compared to conventional systems. (See page 5, lines 19-21). Latos does not teach or suggest a *measurement system* that is employed to measure the *feature parameters* of apertures on an AAPSM, as recited in the subject claims. Rather, Latos discloses a system that obtains *reflectivity* of a substrate and discontinues etching after a *pre-determined time* has been reached.

In particular, the system disclosed in Latos does not disclose *measuring feature parameters* as recited in the subject claims. Instead, Latos discloses a sensor that determines the *reflectivity* of a substrate while the substrate is being etched. Latos utilizes a sensor (e.g. derivative detector) having a variable timer that continuously samples the *reflected light* and provide a control signal in response to a predetermined change in the characteristics of the *light reflected*, which is used to terminate the plasma etch process before an overetch condition occurs. Latos does not teach or suggest *measuring feature parameters* regardless of surface *reflectivity*, as recited in the subject claims.

In addition, Latos employs a *timer* to determine when an etch process is to be terminated. For example, after an etching process exposes an underlying substrate (with a *different reflectivity*), a *timer* is utilized to discontinue etch after the time threshold has been reached. In contrast, since the subject claimed invention does not rely on changes in substrate *reflectivity* to *measure feature parameters*, the need for a timer is mitigated.

In view of at least the foregoing, it is respectfully submitted that Latos neither anticipates nor suggests applicants' invention as recited in independent claim 1, 15 and 25 (and claims 3-14 and 16-20 which depend therefrom), and this rejection should be withdrawn.

II. Rejection of Claims 9-14 Under 35 U.S.C. § 103(a)

Claims 9-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Latos (US Patent No. 4,208,240) in view of Niu *et al.* (Specular Spectroscopic scatterometry in DUV Lithography). It is respectfully submitted that this rejection should

09/955,517

G0228

be withdrawn for at least the following reasons. Claims 9-14 depend respectively from independent claim 1, and Niu *et al.* does not make up for the aforementioned deficiencies of Latos regarding claim 1. Accordingly, this rejection should be withdrawn.

III. Double Patenting

Claims 1-20 and 25 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of copending Application No. 09/893,271. Also, claims 1-20 and 25 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13, 25, 26 of copending Application No. 09/893,186. Withdrawal of this rejection is respectfully requested in view of the Terminal Disclaimer filed herewith.

In the Office Action dated July 21, 2003, Examiner states that the Terminal Disclaimer is not accepted because it "does not satisfy Rule 321(b)(3) in that the person who signed the Terminal Disclaimer has not stated his interest and the extent of the interest of the business entity represented by the signature" in the Reply.

However, it is noted that in the first line of the Terminal Disclaimer, Himanshu Amin (applicants' representative) declares his interest as "the attorney of record for application Serial No. 09/055,517 filed September 18, 2001, entitled IN-SITU or EX-SITU PROFILE MONITORING OF PHASE OPENINGS ON ALTERNATING PHASE SHIFTING MASKS BY SCATTEROMETRY." Thus, it is submitted that the Terminal Disclaimer does satisfy Rule 321(b)(3) and the Terminal Disclaimer should be accepted.

09/955,517

G0228

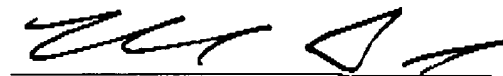
IV. Conclusion

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,
AMIN & TUROCY, LLP



Himanshu S. Amin
Reg. No. 40,894

AMIN & TUROCY, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731

RECEIVED
CENTRAL FAX CENTER

007 1 1 2003